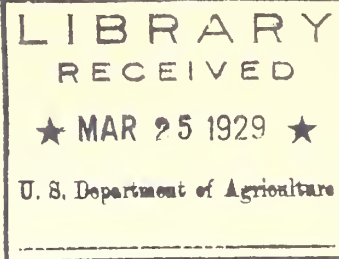


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PROGRESS OF THE BARBERRY ERADICATION CAMPAIGN  
IN ILLINOIS, 1928.

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Introduction

Black stem rust is one of the most serious cereal-crop pests in Illinois. During the past thirteen years grain producers have suffered an annual loss estimated to be nearly three million dollars due to attacks by this disease. In the Northwest this disease is still more destructive. Complete failures of the wheat crop have been due to epidemics of black stem rust. While in Illinois the damage is less serious, it nevertheless is an absolute waste because it can be practically controlled by a complete eradication of all common barberry bushes. The amount of loss due to black stem rust in Illinois has been estimated to be 55,501,000 bushels of small grain during the years from 1915 to 1928, inclusive.

Results of barberry eradication have been very gratifying ever since the beginning of the campaign in 1918. The total number of bushes removed from the State of Illinois has increased each year of the campaign until now a total of 386,608 bushes and 2,175,860 seedlings has been destroyed from 14,911 properties.

The campaign is carried on in Illinois under the supervision of a State Leader employed by the U. S. Department of Agriculture in cooperation with the State Department of Agriculture, University of Illinois, and other State organizations. The Conference for the Prevention of Grain Rust, Minneapolis, Minnesota, cooperates very closely in the enterprise.

The funds for carrying on the campaign are furnished for the most part by the Federal Government, but valuable assistance is rendered by the Illinois Department of Agriculture whose employees spend a part of nearly every year on barberry eradication. Valuable indirect aid is also rendered by the University of Illinois which has printed bulletins, posters, etc., for the promotion of the campaign.

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1/ State Leader of Barberry Eradication in Illinois.

### Survey Methods Used

The survey for barberries began in 1918 with an inspection for planted bushes in all of the cities of Illinois. As a result, several thousand bushes were removed. In a short time it was found that although many bushes could be found in the cities, many more bushes, both planted and escaped from cultivation, were actually growing on the farms. By working in the cities first it was possible to remove the greatest number of bushes in a short time and most rapidly reduce the sources of infection in the State.

The necessity also of conducting a rural survey was found to be so imperative that, after 1920, both types of survey were carried on at the same time. To date, all of the counties north of a line about opposite East St. Louis have been covered by a first survey. More than two-thirds of the bushes found in Illinois have been on farms.

Since 1925, the need for a more thorough second survey of some of the northern counties of the State has been so urgent that the major portion of the activities each year consist of making a careful inspection in the northern counties in preference to completing the survey of the southern counties. This second survey is very intensive in nature. Every farmstead, grove, and every uncultivated area in the county is covered by a survey on foot. Winnebago, Boone, McHenry, DeKalb, Kankakee, and nearly all of JoDaviess and Stephenson Counties have been completely second surveyed. Parts of several others have been completed.

Because of the numbers of bushes which are being found on second survey, small as they are compared with the numbers of bushes which were there at the beginning of the campaign, the necessity of completing the second survey of the northern Counties is evident. The damage which may result from having a few bushes in a county is not confined alone to the actual damage which they themselves may do in spreading rust, but they also constitute a source for berries which may be scattered and produce more rust-spreading bushes.

### Activities in 1928

Activities in 1928 consisted of an extensive educational campaign followed by a systematic survey of Lawrence, Richland, and Clay Counties and parts of JoDaviess, Stephenson, Ogle, and LaSalle Counties by the U. S. Department of Agriculture, and a survey of Kankakee and Livingston Counties by the Illinois Department of Agriculture. The educational activities included furnishing all high schools and colleges of Illinois with study material and of sending a speaker to discuss barberry eradication in the high schools of the counties in which survey was to be conducted during the season.

Newspapers stories were furnished throughout the season to all of the local newspapers in the areas in which survey was being carried on. In addition, one general story was sent out by the College of Agriculture Press Service, to a large number of papers in the State. This was copied by the "Prairie Farmer" and "The National Farm News." A feature story was also printed in the "Illinois Farmer," and one in the "Chicago Herald Examiner." Two radio talks were given over Station WLS during the summer.

Explanatory letters were mailed to all of the farmers in the areas surveyed, slightly in advance of the arrival of the field agents. These letters explained the campaign and also included a card with a description and picture of barberry printed in colors. These letters were of great value to the survey.

Thousands of people learned about barberry and barberry eradication as a result of the educational and publicity activities. Twenty-eight different locations of barberry bushes were reported during the year by citizens who had learned about barberry.

Twenty-seven field agents were employed during the summer of 1928. Five men began field work in JoDaviess County the last of April. The remainder of the force began at the close of school in June. Selection from a large number of candidates was made on the basis of education, previous training in barberry work or other related lines of work, personality, physical fitness, and general adaptability for field work. Assignments in botany and barberry literature were made to all the prospective field men and written reports on this material were required. One and one-half days of instruction and an examination were given at Urbana before the men were finally accepted and sent to the field. An experienced agent was assigned to work with each inexperienced man.

In about one month, the first survey of three southern counties was completed. A total of 105 bushes was found on 26 properties. All of these bushes were destroyed.

Upon the completion of these counties the entire force was employed in the northern counties, where 917 bushes were destroyed on 89 properties. It was in this portion of the State that the major part of our activities was carried on. During the season 1,382 square miles of farm land in these northern counties were carefully scouted. All woodlands, fence lines, creek banks, and other uncultivated land were carefully gone over. All of the northern counties had been surveyed between the years 1920 and 1923. In our second survey this year, our findings of barberry bushes were very small in many places. In others we found sprouting bushes and bushes which had arisen from seeds scattered from the old bushes removed in the first years of the campaign, and bushes



which were not found on the first survey. Barberries growing in many out-of-the-way places, in dense woodlands, on steep, rocky hillsides, along banks of streams, etc., made scouting slow and tedious in many areas.

#### Difficulties of Survey and Eradication

During 1928, 330 square miles of JoDaviess County were covered in a second survey. Much of that territory is extremely rocky and covered with timber having a heavy growth of underbrush. Visibility is low in such places and barberries are naturally well concealed. Several barberries were found even in these places. The progress of the survey was necessarily slow. In one township of JoDavies County 57 rattlesnakes were encountered and killed during the course of the survey for barberries. That a careful inspection was made in that territory needs no further verification. Some of the other areas which were inspected this year presented less serious problems.

#### Stem Rust Losses in 1928

The amount of stem rust in Illinois this year was small. In a few cases stem rust was found spreading from bushes to nearby grains and grasses. One very clear case of such a spread was noted near Warren, Illinois, where the only rust found in the vicinity was found on oats within a half mile of a single rusted barberry bush. Another spread was noted in LaSalle County where an escaped barberry in a hedge fence was spreading rust into the adjoining field of oats.

Weather conditions were unfavorable to the epidemic spread of stem rust over a great area. Had climatic conditions been more favorable for the wide and rapid spread of rust much more serious losses would have been suffered.

Conditions may favor the spread of rust next year. Any bushes still in the State may give the rust the start which will result in an epidemic spread. We must continue our campaign and complete the eradication work which we have pushed so successfully in order to safeguard the results of past efforts and to more completely eliminate the source of future rust epidemics.

#### Other Means of Controlling Rust

There are other means besides barberry eradication of controlling stem rust. Very good results are being obtained by the use of early maturing varieties of grain and varieties which are by nature resistant to the strains of rust which are now known. Experiments are being made to secure practical methods of dusting grain fields with sulphur to

prevent infection. All of these methods are of value and together they are reducing the losses due to stem rust attacks. The most immediately available method of controlling rust is the prevention of the rust by the removal of the host plant on which it is harbored and begins its activity each spring. This is being accomplished thru barberry eradication.

### Other Grain Rusts

Black stem rust is not the only rust which attacks our grain crops. Others which are more or less common but seldom as important as black stem rust are crown rust of oats, and leaf rust of wheat.

These rusts resemble stem rust but the differences between them can be detected by a careful examination of the plants. Neither of these rusts bears any relation to the common barberry and therefore barberry eradication is not a means of controlling them.

### Conclusion

Every common barberry bush now remaining constitutes a menace to future grain crops. The common barberry has no economic value. The Federal and State Departments of Agriculture are removing all of the barberry bushes in the State as fast as possible. Citizens can assist by becoming familiar with the campaign, the common barberry, and the rust it spreads. Samples of any shrubs thought to be common barberry should be sent for identification to the Barberry Eradication Office, Urbana, Illinois.

